



## State of Utah

JON M. HUNTSMAN, JR.  
*Governor*

GARY HERBERT  
*Lieutenant Governor*

## Department of Environmental Quality

William J. Sinclair  
*Acting Executive Director*

DIVISION OF AIR QUALITY  
Cheryl Heying  
Director

DAQE-IN0112840019-09

March 19, 2009

Base Commander  
Hill Air Force Base  
75 CEG/CEV  
7274 Wardleigh Road  
Hill Air Force Base, UT 840565137

Dear Commander:

Re: Intent to Approve: Modification to Approval Order DAQE-AN1284015-06 To Revise Open Detonation Limits, Revise the Sound Focus Mitigation Plan, and Include New and Amended Applicable Requirements for Compression Ignition Internal Combustion Engines Box Elder/Tooele Counties; CDS A; Attainment Area, MACT (Part 63), Major HAP source, NSPS (Part 60), Title V (Part 70)  
Project Number: NSR0112840019

The attached document is the Intent to Approve for the above-referenced project. The Intent to Approve is subject to public review. Any comments received shall be considered before an Approval Order is issued. The Division of Air Quality is authorized to charge a fee for reimbursement of the actual costs incurred in the issuance of an Approval Order. An invoice will follow upon issuance of the final Approval Order.

Future correspondence on this Intent to Approve should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. The project engineer for this action is Nando Meli Jr. , who may be reached at (801) 536-4052.

Sincerely,

Ty L Howard, Manager  
Major New Source Review Section

TLH:NM:dn

cc: Mike Owens  
Bear River Health Department

**STATE OF UTAH**

**Department of Environmental Quality**

**Division of Air Quality**

**INTENT TO APPROVE: Modification to Approval Order DAQE-AN1284015-06 To Revise Open Detonation Limits, Revise the Sound Focus Mitigation Plan, and Include New and Amended Applicable Requirements for Compression Ignition Internal Combustion Engines**

**Prepared By: Nando Meli Jr. , Engineer  
Phone: (801) 536-4052  
Email: nmeli@utah.gov**

**INTENT TO APPROVE NUMBER**

**DAQE-IN0112840019-09**

**Date: March 19, 2009**

**Hill Air Force Base: Utah Test and Training Range**

**Source Contact:  
Mr. Glenn Palmer  
Phone: (801) 514-5380**

**Ty L Howard, Manager  
Major New Source Review Section  
Utah Division of Air Quality**

## **ABSTRACT**

Hill Air Force Base (Hill AFB) performs Open Detonation (OD) and Open Burning (OB) operations at the Thermal Treatment Unit (TTU) located at Hill AFB's Utah Test and Training Range (UTTR). Currently the UTTR is allowed to OD up to 84,000 lbs Net Explosive Weight (N.E.W.) total per day. Hill AFB has requested to revise OD limits, update the Sound Focus Mitigation Plan, and include new and amended applicable requirements for reciprocating internal combustion engines. As a result of these modifications there will be no increase in the daily or yearly OD limits and the daily or annual emissions.

The UTTR site is located in Box Elder and Tooele Counties. These Counties are attainment areas of the National Ambient Air Quality Standards (NAAQS) for all pollutants. Title V of the 1990 Clean Air Act applies to this source. The Title V operating permit for this source shall be amended prior to the implementation of the changes in the AO conditions.

The NOI for the above-referenced project has been evaluated and has been found to be consistent with the requirements of UAC R307. Air pollution producing sources and/or their air control facilities may not be constructed, installed, established, or modified prior to the issuance of an AO by the Executive Secretary of the Utah Air Quality Board.

A 30-day public comment period will be held in accordance with UAC R307-401-7. A notification of the intent to approve will be published in the Box Elder News & Journal on March 25, 2009. During the public comment period the proposal and the evaluation of its impact on air quality will be available for the public to review and provide comment. If anyone so requests a public hearing, it will be held in accordance with UAC R307-401-7. The hearing will be held as close as practicable to the location of the source. Any comments received during the public comment period and the hearing will be evaluated. The proposed conditions of the AO may be changed as a result of the comments received.

### **Name of Permittee:**

Hill Air Force Base  
75 CEG/CEV  
7274 Wardleigh Road  
Hill Air Force Base, UT 840565137

### **Permitted Location:**

Hill Air Force Base: Utah Test and Training  
Range  
West side of Great Salt Lake  
Box Elder/Tooele Counties, UT

**UTM coordinates:** 341916 m Easting, 4555085 m Northing  
**SIC code:** 9711 (National Security)

## **Section I: GENERAL PROVISIONS**

- I.1 All definitions, terms, abbreviations, and references used in this AO conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited in these AO conditions refer to those rules. [R307-101]
- I.2 The limits set forth in this AO shall not be exceeded without prior approval. [R307-401]
- I.3 Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved. [R307-401-1]

- I.4 All records referenced in this AO or in other applicable rules, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the five-year period prior to the date of the request. Unless otherwise specified in this AO or in other applicable state and federal rules, records shall be kept for a minimum of five (5) years. [R307-401]. [R307-415-6b]
- I.5 At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this AO, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded. [R307-401-4]
- I.6 The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring. [R307-150]
- I.7 The owner/operator shall comply with UAC R307-107. General Requirements: Unavoidable Breakdowns. [R307-107]

## **Section II: SPECIAL PROVISIONS**

### **II.A The approved installations shall consist of the following equipment:**

#### **II.A.1 Test & Training Range**

Plantwide

#### **II.A.2 Landfill**

This is included for informational purposes only.

#### **II.A.3 Class II and Class IV Landfill**

Contains a wood collection, nonhazardous scrap waste from munitions, scrap building material, and construction debris with a maximum design capacity of 120,000 tons. This is not subject to NSPS.

#### **II.A.4 Generators**

Miscellaneous diesel fired generators not to exceed 600 Horsepower (Hp) per generator  
Hill AFB may add or remove generators that are less than or equal to 400 kW.

#### **II.A.5 Generator**

2950 Hp diesel fired engine.

Located at North Range Building 40044.

#### **II.A.6 Storage tanks**

Diesel fuel and/or gasoline storage tanks that are less than 19,812 gallons per tank.

Hill AFB may add or remove diesel fuel and/or gasoline storage tanks that have a capacity less than 19,812 gallons.

## **II.B Requirements and Limitations**

### **II.B.1 Plantwide Conditions**

- II.B.1.a The approved operation shall include the destruction by open detonation or open burning of missile motors containing Hazard Class 1.1 propellant, munitions containing Hazard Class 1.1 energetic materials, Class 1.3 energetic materials, and/or Class 1.4 energetic materials at the Thermal Treatment Unit (TTU) located on the UTTR. If a propellant or a munition that is not a Hazardous Class 1.1, 1.3 or 1.4 is to be detonated or burned prior approval must be obtained from the Executive Secretary. [R307-401]
- II.B.1.b The following limitations shall not be exceeded:
- A. The open detonation of missile, rocket motors and/or munitions shall not exceed a Net Explosive Weight (N.E.W.) of 84,000 pounds per calendar day at the TTU.
  - B. There shall be a minimum of one hour between detonations at the TTU.
  - C. The open detonation of missile, rocket motors and/or munitions shall not exceed an accumulative N.E.W. of 6,552,000 pounds per calendar year at the TTU.
  - D. 225,000 gallons of diesel fuel consumed in stationary internal combustion engines per calendar year. [R307-401]
- II.B.1.c The most current sound focusing mitigation plan shall be used for all detonations greater than or equal to 10,000 lbs N.E.W. at the TTU. A copy is attached to this AO as Appendix A. If the plan needs changing, a copy of the new plan shall be submitted to the Executive Secretary for approval. The plan shall outline the procedures that will be used for each detonation that will minimize the effects of over pressure on large populations of people located in Tooele, Grantsville, and Wasatch Front Cities. The plan shall contain specific criteria that will be used to decide whether or not to detonate. The sound mitigation plan will be kept in the DAQ file for the public to view. If the plan proves inadequate to predict adverse focus conditions in areas off of UTTR property, i.e., there are complaints of excessive focusing of noise, the detonation operation shall be terminated until the focusing criteria and plan has been adjusted and approved by the Executive Secretary. Adequacy of any plan adjustment shall be determined by the Executive Secretary in coordination with the UTTR/Hill Air Force Base staff. [R307-401]
- II.B.1.d No detonations of Hazard Class 1.1 propellants greater than 500 pounds NEW at the TTU shall occur after December 19, or before February 22, of any year. [R307-401]
- II.B.1.e No detonation shall be carried out during dark hours of the day (i.e., one hour before sunset through one hour after sunrise). [R307-401]
- II.B.1.f Hill AFB shall not perform any detonations during any emergency episode within 50 miles of the detonation site in accordance with R307-105. If an emergency episode is declared in the state of Utah that is within 70 miles of the TTU, Hill AFB needs to submit a plan outlining the procedures that they will follow during the emergency episode. The plan shall identify what control/production measures Hill AFB shall implement when an emergency episode is declared by the Executive Director of the Department of Environmental Quality that is within 50 miles

of the TTU. Specific emission reduction measures shall be outlined for all three levels (Alert, Warning, Emergency). The values for the various levels are listed in R307-105. Also see 40 CFR, Part 51, Subpart H (40 CFR 51.150 to 153) and Appendix L. The emergency plan shall be approved by the Executive Secretary. The Alert Level actions to be taken should be curtailment of all unnecessary activities causing air pollution. The other two levels of actions should be a progressive curtailment of production and activities causing pollution, to the point of complete shutdown of operations. [R307-401]

- II.B.1.g Hill AFB is not allowed the open burning of any waste containing beryllium or other highly toxic materials except when meteorological conditions are such that the resulting products of combustion will traverse over unoccupied areas only. A description and evaluation of the quantities of highly toxic material to be emitted to the atmosphere must be submitted to the Executive Secretary prior to each burning. [R307-401]
- II.B.1.h Visible emissions for all stationary sources shall not exceed a 20% opacity. For visible emissions from internal combustion sources including stationary diesel generators, emergency diesel power generators, and numerous portable generators used to supply temporary power in remote locations in support of test and training activities shall have visible emissions no greater than 20 percent opacity except for a period not exceeding 3 minutes in any hour. [R307-401]
- II.B.1.i Hill AFB shall abide by a fugitive dust control plan acceptable to the Executive Secretary for control of all dust sources associated with the UTTR site. The fugitive dust control plan shall contain sufficient controls to prevent an increase in PM<sub>10</sub> emissions above those modeled for the AO (DAQE-1284011-02) dated November 14, 2002. Hill AFB shall abide by the most current fugitive dust control plan approved by the Executive Secretary. [R307-401]
- II.B.1.j The sulfur content of any fuel oil or diesel burned shall not exceed 0.5 percent by weight for diesel fuels consumed in the generators. [R307-401]
- II.B.1.k In addition to the requirements of this AO, all applicable provisions of 40 CFR 60, NSPS Subpart A, 40 CFR 60.1 to 60.18 (General Provisions), and Subpart IIII, 40 CFR 60.4200 to 60.4219 (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) apply to this installation. [R307-401]
- II.B.1.l In addition to the requirements of this AO, all applicable provisions of MACT Standards Subpart A, 63.1 to 63.16 (General Provisions), and Subpart ZZZZ, 40 CFR 63.6580 to 63.6675 (National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) apply to this installation. [40 CFR 63 Subpart ZZZZ]
- II.B.2 **Stationary reciprocating internal combustion engines**
- II.B.2.a Hill AFB is allowed to add or modify any stationary reciprocating internal combustion engine, provided that each of the following conditions are met:
  - A. The proposed addition or modification does not cause an increase in the currently established base-wide 225,000 gallons per calendar year diesel fuel consumption limitation.

- B. The engine is rated at less than or equal to 400 kW power output. If new BACT for this type of process is established, DAQ has the right to re-open this AO to change BACT for this process accordingly. [R307-401]

**II.B.3 Stationary Emergency Compression Ignition Internal Combustion Engines Subject to NSPS (Affected Emission Units)**

II.B.3.a The owner/operator shall operate and maintain affected emission units that achieve the emission standards as required in 40 CFR 60.4205 according to the manufacturer's written instructions or procedures developed by the owner/operator that are approved by the engine manufacturer, over the entire life of the engine. In addition, the owner/operator may only change those settings that are permitted by the manufacturer. The owner/operator shall also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to owner/operator. [Authority granted under 40 CFR 60.4206 and 40 CFR 60.4211(a); condition originated in 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ].

- A. Monitoring: Records required for this permit condition will serve as monitoring.
- B. Recordkeeping: Owner/operator shall document activities performed to assure proper operation and maintenance. Records shall be maintained in accordance with Condition I.4 of this permit.
- C. Reporting: There are no reporting requirements for this Condition. [40 CFR 60]

II.B.3.b Sulfur content of any diesel fuel combusted shall be no greater than 500 ppm (0.05 percent by weight) and beginning October 1, 2010, sulfur content of any diesel fuel combusted in an affected emission unit with a displacement of less than 30 liters per cylinder shall be no greater than 15 ppm (0.0015 percent by weight). [Authority granted under 40 CFR 60.4207; condition originated in 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ].

- A. Monitoring: For each delivery of diesel fuel, the owner/operator shall either:
  - 1) Determine the fuel sulfur content expressed as wt% in accordance with the methods of the American Society for Testing Materials (ASTM); or
  - 2) Inspect the fuel sulfur content expressed as wt% determined by the vendor using methods of the ASTM; or
  - 3) Inspect documentation provided by the vendor that demonstrates compliance with this provision (directly or indirectly).
- B. Recordkeeping: For each fuel load received, the owner/operator shall maintain either fuel receipt records showing sulfur content of the delivered fuel or records of all sulfur content testing performed on the delivered fuel. These records shall be maintained in accordance with Condition I.4 of this permit.
- C. Reporting: There are no reporting requirements for this Condition. [40 CFR 60]

- II.B.3.c Each affected emission unit shall not exceed 100 hours of maintenance checks and readiness testing per year unless the owner/operator maintains records indicating that Federal, State, or local standards require maintenance and testing of affected emission units beyond 100 hours per year. [Authority granted under 40 CFR 60.4211(e); condition originated in 40 CFR 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ].
- A. Monitoring: The owner/operator shall install a non-resettable hour meter prior to startup of affected emission units. Hours of operation shall be monitored using the non-resettable hour meter (origin: 40 CFR 60.4209(a)).
  - B. Recordkeeping: Records of monitoring of each affected emission unit shall be kept on a monthly basis in an operation and maintenance log. Records shall distinguish between maintenance-related hours and emergency use-related hours. If maintenance and testing beyond 100 hours per year are required by Federal, State, or local standards, records of these standards shall also be kept.  
  
Starting with the model years in Table 5 of 40 CFR 60 Subpart IIII, if an affected emission unit does not meet the standards applicable to non-emergency engines in the applicable model year, the owner/operator shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner/operator must record the time of operation of the engine and the reason the engine was in operation during that time. (Origin: 40 CFR 60.4214(b)) Records shall be maintained as described in Condition I.4 of this permit.
  - C. Reporting: There are no reporting requirements for this Condition. [40 CFR 60]
- II.B.3.d For all affected emission units, except those that are modified, reconstructed, or removed from one existing location and reinstalled at a new location, the owner/operator shall comply with paragraphs (a) through (c).
- (a) After December 31, 2008, the owner/operator shall not install affected emission units that do not meet the applicable requirements for 2007 model year engines.
  - (b) After December 31, 2009, the owner/operator shall not install affected emission units with a maximum engine power of less than 19 KW (25 HP) that do not meet the applicable requirements for 2008 model year engines.
  - (c) The owner/operator shall not import affected emission units with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) and (b) of this section after the dates specified in paragraphs (a) and (b) of this section. [Authority granted under 40 CFR 60.4208; condition originated in 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ].
- A. Monitoring: Records required for this permit condition will serve as monitoring.
  - B. Recordkeeping: The owner/operator shall keep records of the install date of each affected emission unit and the applicable requirements under 40 CFR 60 Subpart IIII. Records shall be maintained as described in Condition I.4 of this permit.



C. Reporting: There are no reporting requirements for this Condition. [40 CFR 60]

II.B.3.e Pre-2007 model year affected emission units with a displacement of less than 10 liters per cylinder shall comply with the emission standards in Table 1 of 40 CFR 60 Subpart IIII. Pre-2007 model year affected emission units with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder shall comply with the emission standards in 40 CFR 94.8(a)(1). [Authority granted under 40 CFR 60.4205(a); condition originated in 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ]

A. Monitoring: The owner/operator shall demonstrate compliance according to one of the methods specified in paragraphs (1) through (5) of this section.

- 1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.
- 2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in 40 CFR 60 Subpart IIII and these methods must have been followed correctly.
- 3) Keeping records of engine manufacturer data indicating compliance with the standards.
- 4) Keeping records of control device vendor data indicating compliance with the standards.
- 5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in 40 CFR 60.4212, as applicable. (Origin: 40 CFR 60.4211(b)).

B. Recordkeeping: Results of monitoring shall be maintained in accordance with Condition I.4 of this permit.

C. Reporting: There are no reporting requirements for this condition. [40 CFR 60]

II.B.3.f 2007 model year and later affected emission units with a displacement of less than 30 liters per cylinder shall comply with the emission standards for new nonroad CI ICE in 40 CFR 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE. [Authority granted under 40 CFR 60.4205(b); condition originated in 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ]

A. Monitoring: The owner/operator shall comply by purchasing an engine certified to the emission standards in 40 CFR 60.4205(b) for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications. (Origin: 40 CFR 60.4211(c)).

B. Recordkeeping: Results of monitoring shall be maintained in accordance with Condition I.4 of this permit.

C. Reporting: There are no reporting requirements for this Condition. [40 CFR 60]

II.B.4            **Storage tanks**

II.B.4.a           Hill AFB is allowed to add or modify any above ground or under ground diesel and/or gasoline fuel storage tank, provided that the tank capacity is less than 19,812 gallons. If new BACT for this type of process is established, DAQ has the right to re-open this permit to change BACT for this process accordingly. [R307-401]

**Section III: APPLICABLE FEDERAL REQUIREMENTS**

In addition to the requirements of this AO, all applicable provisions of the following federal programs have been found to apply to this installation. This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including UAC R307.

MACT (Part 63), ZZZZ: Recipro. Int. Comb Engine (RICE)  
NSPS (Part 60), IIII: Stationary Comp/Ignit R.I.C.E

**PERMIT HISTORY**

The final AO will be based on the following documents:

Incorporates	Additional Information dated March 5, 2009
Incorporates	Additional Information dated March 22, 2008
Incorporates	Additional Information dated March 5, 2008
Incorporates	Additional Information dated December 4, 2007
Incorporates	Additional Information dated November 27, 2007
Incorporates	Notice of Intent dated February 27, 2007
Supersedes	DAQE-AN1284015-06 dated May 12, 2006

## ACRONYMS

The following lists commonly used acronyms and their associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
ATT	Attainment Area
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by EPA to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CO	Carbon monoxide
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
MACT	Maximum Achievable Control Technology
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO <sub>x</sub>	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM <sub>10</sub>	Particulate matter less than 10 microns in size
PM <sub>2.5</sub>	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO <sub>2</sub>	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds